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GENES.USPT,PGPB.	34632
(AGFA ADJ GENE).USPT,PGPB.	1
(AGFA GENE).USPT,PGPB.	1

Database: US Patents Full-Text Database; US Pre-Grant Publication Full-Text Database; JPO Abstracts Database; EPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

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DATE: Monday, February 18, 2002 Printable Copy Create Case

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L1	agfA gene	1	L1

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☐ 1. Document ID: US 5635617 A

L1: Entry 1 of 1 File: USPT Jun 3, 1997

US-PAT-NO: 5635617
DOCUMENT-IDENTIFIER: US 5635617 A

TITLE: Methods and compositions comprising the agfA gene for detection of Salmonella

DATE-ISSUED: June 3, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Doran; James L.	Brentwood Bay			CAX
Kay; William W.	Victoria			CAX
Collinson; S. Karen	Brentwood Bay			CAX
Clouthier; Sharon C.	Naniamo			CAX

US-CL-CURRENT: 536/23.7; 536/23.1

Full | Title | CLS.1 REF.1 SEQ.1 ATT.1

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(AGFA ADJ GENE).USPT,PGPB.	1
(AGFA GENE).USPT,PGPB.	1

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Previous Page Next Page

BACTERIAL FIMBRIAL SYSTEM FOR PRESENTATION OF HETEROLOGOUS PEPTIDE SEQUENCES

Patent Number: WO0060102

Publication date: 2000-10-12

Inventor(s): DORAN JAMES L (CA); KAY WILLIAM W (CA); WHITE AARON P (CA); COLLISON S KAREN (CA)

Applicant(s):: DORAN JAMES L (CA); KAY WILLIAM W (CA); WHITE AARON P (CA); COLLISON S KAREN (CA); INNOVATION AND DEV CORP UNIVER (CA)

Requested Patent: ☐ WO0060102

Application Number: WO2000CA00356 20000405

Priority Number(s): US19990127888P 19990405

IPC Classification: C12N15/62 ; C07K14/255 ; C07K14/245 ; C07K14/44 ; A61K39/112 ; A61K39/108 ; A61K39/008 ; C12N1/21 ; C12N15/90 ; C12R1/42 ; C12R1/19

EC Classification: C07K14/44, C07K14/245, C07K14/55

Equivalents: AU3650800

Abstract

The invention provides a system for creating recombinant agfA fimbrin genes and performing chromosomal gene replacements within Salmonella, creating Salmonella strains which carry the recombinant agfA genes at the native position in the chromosome. One embodiment of the invention is exemplified by the expression of a model epitope (PT3) obtained from the GP63 protein of Leishmania major, by formation of recombinant agfA genes encoding PT3 fusing proteins recombined at 10 different sites throughout the agfA gene. These fusions are shown to be expressed in the thin aggregative fimbriae on the surface of bacterial cell. The AgfA fimbrin of Salmonella (CsgA for E. coli) provides a flexible and stable vehicle for the expression of foreign epitopes in enterobacteriaceae and the subsequent thin aggregative fimbrae (curli) expression product provide an ideal organelle for presentation of the foreign epitopes at the cell surface.

(FILE 'HOME' ENTERED AT 16:09:31 ON 18 FEB 2002)

FILE 'BIOSIS, CABA, CAPLUS, EMBASE, LIFESCI, MEDLINE, SCISEARCH, USPATFULL, JAPIO' ENTERED AT 16:10:15 ON 18 FEB 2002

L1 22 S AGFA GENE
L2 3 S L1 AND RECOMBINANT

=>

ANSWER 1 OF 3 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 2000:225999 BIOSIS
DOCUMENT NUMBER: PREV200000225999
TITLE: Salmonella enteritidis fimbriae displaying a heterologous epitope reveal a uniquely flexible structure and assembly mechanism.
AUTHOR(S): White, Aaron P.; Collinson, S. Karen; Banser, Pamela A.; Dolhaine, Daphne J.; Kay, William W. (1)
CORPORATE SOURCE: (1) Department of Biochemistry and Microbiology, University of Victoria, Victoria, British Columbia Canada
SOURCE: Journal of Molecular Biology, (Feb., 2000) Vol. 296, No. 2, pp. 361-372.
ISSN: 0022-2836.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English

L2 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:725786 CAPLUS
DOCUMENT NUMBER: 133:306338
TITLE: Use of the agfA fimbrin of Salmonella to present foreign proteins on the surface of a bacterial host
INVENTOR(S): White, Aaron P.; Doran, James L.; Collison, S. Karen; Kay, William W.
PATENT ASSIGNEE(S): Innovation and Development Corporation, University of Victoria, Can.
SOURCE: PCT Int. Appl., 139 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000060102	A2	20001012	WO 2000-CA356	20000405
WO 2000060102	A3	20010104		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-127888 P 19990405

L2 ANSWER 3 OF 3 USPATFULL
ACCESSION NUMBER: 97:47521 USPATFULL
TITLE: Methods and compositions comprising the **agfA gene** for detection of Salmonella
INVENTOR(S): Doran, James L., Brentwood Bay, Canada
Kay, William W., Victoria, Canada
Collinson, S. Karen, Brentwood Bay, Canada
Clouthier, Sharon C., Naniamo, Canada
PATENT ASSIGNEE(S): University of Victoria Innovation & Development Corp., Victoria, Canada (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5635617		19970603
APPLICATION INFO.:	US 1994-233788		19940426 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1993-54452, filed

	on 26 Apr 1993, now abandoned
DOCUMENT TYPE:	Utility
FILE SEGMENT:	Granted
PRIMARY EXAMINER:	Campbell, Eggerton A.
LEGAL REPRESENTATIVE:	Seed and Berry LLP
NUMBER OF CLAIMS:	5
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	26 Drawing Figure(s); 22 Drawing Page(s)
LINE COUNT:	3934

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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NEWS  1          Web Page URLs for STN Seminar Schedule - N. America
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                 to PHARMASEARCH
NEWS  3  Oct 09  Korean abstracts now included in Derwent World Patents
                 Index
NEWS  4  Oct 09  Number of Derwent World Patents Index updates increased
NEWS  5  Oct 15  Calculated properties now in the REGISTRY/ZREGISTRY File
NEWS  6  Oct 22  Over 1 million reactions added to CASREACT
NEWS  7  Oct 22  DGENE GETSIM has been improved
NEWS  8  Oct 29  AAASD no longer available
NEWS  9  Nov 19  New Search Capabilities  USPATFULL and USPAT2
NEWS 10  Nov 19  TOXCENTER(SM) - new toxicology file now available on STN
NEWS 11  Nov 29  COPPERLIT now available on STN
NEWS 12  Nov 29  DWPI revisions to NTIS and US Provisional Numbers
NEWS 13  Nov 30  Files VETU and VETB to have open access
NEWS 14  Dec 10  WPINDEX/WPIDS/WPIX New and Revised Manual Codes for 2002
NEWS 15  Dec 10  DGENE BLAST Homology Search
NEWS 16  Dec 17  WELDASEARCH now available on STN
NEWS 17  Dec 17  STANDARDS now available on STN
NEWS 18  Dec 17  New fields for DPCI
NEWS 19  Dec 19  CAS Roles modified
NEWS 20  Dec 19  1907-1946 data and page images added to CA and CAplus
NEWS 21  Jan 25  BLAST(R) searching in REGISTRY available in STN on the Web
NEWS 22  Jan 25  Searching with the P indicator for Preparations
NEWS 23  Jan 29  FSTA has been reloaded and moves to weekly updates
NEWS 24  Feb 01  DKILIT now produced by FIZ Karlsruhe and has a new update
                 frequency
NEWS 25  Feb 19  Access via Tymnet and SprintNet Eliminated Effective 3/31/02

NEWS EXPRESS  February 1 CURRENT WINDOWS VERSION IS V6.0d,
              CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),
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=> s agfA
L1 2982 AGFA

=> s l1 and recombinant
L2 97 L1 AND RECOMBINANT

=> s l2 and carrier
L3 58 L2 AND CARRIER

=> s l3 and foreign
L4 18 L3 AND FOREIGN

=> dup rem l4
PROCESSING COMPLETED FOR L4
L5 18 DUP REM L4 (0 DUPLICATES REMOVED)

=> d ibib 1-18

L5 ANSWER 1 OF 18 USPATFULL
ACCESSION NUMBER: 2001:237670 USPATFULL
TITLE: Screening method for the discovery and directed evolution of oxygenase enzymes
INVENTOR(S): Arnold, Frances H., Pasadena, CA, United States
Joern, John, Pasadena, CA, United States
Sakamoto, Takeshi, Machidashi, Japan
Schwaneberg, Ulrich, Pasadena, CA, United States
PATENT ASSIGNEE(S): CALIFORNIA INSTITUTE OF TECHNOLOGY (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2001055786	A1	20011227
APPLICATION INFO.:	US 2001-828599	A1	20010405 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-194992	20000405 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: DARBY & DARBY, 805 THIRD AVENUE, 27TH FLR., NEW YORK, NY, 10022
NUMBER OF CLAIMS: 62
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 17 Drawing Page(s)
LINE COUNT: 2437
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 2 OF 18 USPATFULL
ACCESSION NUMBER: 2001:25422 USPATFULL
TITLE: Methods of using Flt-3 ligand for exogenous gene transfer
INVENTOR(S): Lyman, Stewart D., Seattle, WA, United States
Beckmann, M. Patricia, Poulsbo, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6190655	B1	20010220
APPLICATION INFO.:	US 1998-160841		19980925 (9)

RELATED APPLN. INFO.: Division of Ser. No. US 1997-993962, filed on 18 Dec 1997, now patented, Pat. No. US 5843423 Continuation of Ser. No. US 1995-444625, filed on 19 May 1995, now abandoned Division of Ser. No. US 1994-243545, filed on 11 May 1994, now patented, Pat. No. US 5554512 Continuation-in-part of Ser. No. US 1994-209502, filed on 7 Mar 1994, now abandoned Continuation-in-part of Ser. No. US 1993-162407, filed on 3 Dec 1993, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Gambel, Phillip
LEGAL REPRESENTATIVE: Fowler, Kathleen, Malaska, Stephen L.
NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1,13
LINE COUNT: 1865
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 3 OF 18 USPATFULL
ACCESSION NUMBER: 2000:94689 USPATFULL
TITLE: Methods for promoting functional regeneration of mammalian muscle by administering leukaemia inhibitor factor
INVENTOR(S): Bartlett, Perry, North Carlton, Australia
Murphy, Mark, Fitzroy, Australia
Brown, Melissa, London, United Kingdom
PATENT ASSIGNEE(S): Amrad Corporation Limited, Victoria, Australia (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6093390		20000725
APPLICATION INFO.:	US 1993-62056		19930514 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 923939

	NUMBER	DATE
PRIORITY INFORMATION:	AU 1990-9205	19900520

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Duffy, Patricia A.
LEGAL REPRESENTATIVE: Scully, Scott, Murphy & Presser
NUMBER OF CLAIMS: 12

EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 40 Drawing Figure(s); 24 Drawing Page(s)
LINE COUNT: 1450
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 4 OF 18 USPATFULL
ACCESSION NUMBER: 1999:96221 USPATFULL
TITLE: Markers for organ rejection
INVENTOR(S): Hauns.o slashed., Stig, Rungsted, Denmark
Carlsen, J.o slashed.rn, Charlottenlund, Denmark
Kjeldsen, Keld, K.o slashed.benhavn .O slashed., Denmark
Johansen, Thais Taaning, Skodsborg, Denmark
Larsen, Peter Mose, Aarhus C, Denmark
Jensen, Ulla Andrup, Galten, Denmark
Fey, Stephen John, Aarhus C, Denmark
Boutry, Marc, Brussels, Belgium
Degand, Herve, Havre-Mons, Belgium
PATENT ASSIGNEE(S): Universite Catholique de Louvain, Louvain La Neuve, Belgium (non-U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5939270		19990817	
	WO 9517425		19950629	
APPLICATION INFO.:	US 1995-424292		19950418	(8)
	WO 1994-EP4295		19941223	
			19950418	PCT 371 date
			19950418	PCT 102(e) date

	NUMBER	DATE
PRIORITY INFORMATION:	DK 1993-1453	19931223

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Saunders, David
LEGAL REPRESENTATIVE: Klauber & Jackson
NUMBER OF CLAIMS: 16
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 2484
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 5 OF 18 USPATFULL
ACCESSION NUMBER: 1999:81925 USPATFULL
TITLE: Isolated Epstein-Barr virus BZLF2 proteins that bind MHC class II .beta.chains
INVENTOR(S): Alderson, Mark, Bainbridge Island, WA, United States
Armitage, Richard J., Bainbridge Island, WA, United States
Cohen, Jeffrey I., Silver Spring, MD, United States
Comeau, Michael R., Seattle, WA, United States
Farrah, Theresa M., Seattle, WA, United States
Hutt-Fletcher, Lindsey M., Kansas City, MO, United States
Spriggs, Melanie K., Seattle, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5925734		19990720	
APPLICATION INFO.:	US 1997-936854		19970924	(8)
RELATED APPLN. INFO.:	Division of Ser. No. US 1995-430633, filed on 28 Apr			

1995, now patented, Pat. No. US 5726286 which is a continuation-in-part of Ser. No. US 1994-235397, filed on 28 Apr 1994, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Mosher, Mary E.
ASSISTANT EXAMINER: Salimi, Ali R.
LEGAL REPRESENTATIVE: Perkins, Patricia Anne
NUMBER OF CLAIMS: 6
EXEMPLARY CLAIM: 1,3
NUMBER OF DRAWINGS: 11 Drawing Figure(s); 7 Drawing Page(s)
LINE COUNT: 1762
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 6 OF 18 SCISEARCH COPYRIGHT 2002 ISI (R)
ACCESSION NUMBER: 1999:357695 SCISEARCH
THE GENUINE ARTICLE: 192AK
TITLE: High efficiency gene replacement in Salmonella enteritidis: chimeric fimbrins containing a T-cell epitope from Leishmania major
AUTHOR: White A P; Collinson S K; Burian J; Clouthier S C; Banser P A; Kay W W (Reprint)
CORPORATE SOURCE: UNIV VICTORIA, DEPT BIOCHEM & MICROBIOL, PETCH BLDG, VICTORIA, BC V8W 3P6, CANADA (Reprint); UNIV VICTORIA, DEPT BIOCHEM & MICROBIOL, VICTORIA, BC V8W 3P6, CANADA
COUNTRY OF AUTHOR: CANADA
SOURCE: VACCINE, (23 APR 1999) Vol. 17, No. 17, pp. 2150-2161. Publisher: ELSEVIER SCI LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND. ISSN: 0264-410X.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE; AGRI
LANGUAGE: English
REFERENCE COUNT: 49
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L5 ANSWER 7 OF 18 USPATFULL
ACCESSION NUMBER: 1998:150447 USPATFULL
TITLE: Methods of stimulating hematopoietic cells with flt3-ligand
INVENTOR(S): Lyman, Stewart D., Seattle, WA, United States
Beckmann, M. Patricia, Poulsbo, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5843423		19981201
APPLICATION INFO.:	US 1997-993962		19971218 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1995-444625, filed on 19 May 1995, now abandoned which is a division of Ser. No. US 1994-243545, filed on 11 May 1994, now patented, Pat. No. US 5554512, issued on 6 Sep 1996 which is a continuation-in-part of Ser. No. US 1994-209502, filed on 7 Mar 1994, now abandoned which is a continuation-in-part of Ser. No. US 1993-162407, filed on 3 Dec 1993, now abandoned which is a continuation-in-part of Ser. No. US 1993-111758, filed on 25 Aug 1993, now abandoned which is a continuation-in-part of Ser. No. US 1993-106463, filed on 12 Aug 1993, now abandoned which is a continuation-in-part of Ser. No. US 1993-68394, filed on 24 May 1993
DOCUMENT TYPE: Utility

FILE SEGMENT: Granted
PRIMARY EXAMINER: Feisee, Lila
ASSISTANT EXAMINER: Gambel, Phillip
LEGAL REPRESENTATIVE: Malaska, Stephen L.
NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1
LINE COUNT: 2056
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 8 OF 18 USPATFULL
ACCESSION NUMBER: 1998:88472 USPATFULL
TITLE: Antibodies immunoreactive with leukemia inhibitory factor receptors
INVENTOR(S): Gearing, David P., Seattle, WA, United States
Beckmann, Patricia M., Poulsbo, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5785967		19980728
APPLICATION INFO.:	US 1994-347003		19941129 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1993-119780, filed on 10 Sep 1993, now patented, Pat. No. US 5420247 which is a division of Ser. No. US 1992-943843, filed on 11 Sep 1992, now patented, Pat. No. US 5284755 which is a continuation-in-part of Ser. No. US 1991-670608, filed on 13 Mar 1991, now abandoned which is a continuation-in-part of Ser. No. US 1990-626725, filed on 13 Dec 1990, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Caputa, Anthony C.
ASSISTANT EXAMINER: Navarro, Mark
LEGAL REPRESENTATIVE: Anderson, Kathryn A., Henry, Janis C.
NUMBER OF CLAIMS: 8
EXEMPLARY CLAIM: 4
NUMBER OF DRAWINGS: 8 Drawing Figure(s); 8 Drawing Page(s)
LINE COUNT: 2647
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 9 OF 18 USPATFULL
ACCESSION NUMBER: 1998:68987 USPATFULL
TITLE: Soluble type II interleukin-1 receptors and methods
INVENTOR(S): Sims, John E., Seattle, WA, United States
Cosman, David J., Bainbridge Island, WA, United States
Lupton, Stephen D., Seattle, WA, United States
Mosley, Bruce A., Seattle, WA, United States
Dower, Steven K., Redmond, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5767064		19980616
APPLICATION INFO.:	US 1995-442043		19950516 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1994-242211, filed on 13 May 1994, now patented, Pat. No. US 5464937 which is a division of Ser. No. US 1993-91519, filed on 12 Jul 1993, now patented, Pat. No. US 5350683 which is a continuation of Ser. No. US 1991-701415, filed on 16 May 1991, now abandoned which is a continuation-in-part of Ser. No. US 1990-627071, filed on 13 Dec 1990, now abandoned which is a continuation-in-part of Ser. No.

US 1990-573576, filed on 24 Aug 1990, now abandoned
which is a continuation-in-part of Ser. No. US
1990-534193, filed on 5 Jun 1990, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Ulm, John
LEGAL REPRESENTATIVE: Perkins, Patricia Anne, Henry, Janis C.
NUMBER OF CLAIMS: 22
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Figure(s); 4 Drawing Page(s)
LINE COUNT: 2047
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 10 OF 18 USPATFULL
ACCESSION NUMBER: 1998:25340 USPATFULL
TITLE: Isolated epstein-barr virus BZLF2 proteins that bind MHC class II beta chains
INVENTOR(S): Alderson, Mark, Bainbridge Island, WA, United States
Armitage, Richard J., Bainbridge Island, WA, United States
Cohen, Jeffrey I., SIlver Spring, MD, United States
Comeau, Michael R., Seattle, WA, United States
Farrah, Theresa M., Seattle, WA, United States
Hutt-Fletcher, Lindsey M., Kansas City, MO, United States
Spriggs, Melanie K., Seattle, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5726286		19980310
APPLICATION INFO.:	US 1995-430633		19950428 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1994-235397, filed on 28 Apr 1994, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Knode, Marian C.
ASSISTANT EXAMINER: Salimi, Ali R.
LEGAL REPRESENTATIVE: Perkins, Patricia Anne
NUMBER OF CLAIMS: 2
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 11 Drawing Figure(s); 7 Drawing Page(s)
LINE COUNT: 1714
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 11 OF 18 USPATFULL
ACCESSION NUMBER: 97:47521 USPATFULL
TITLE: Methods and compositions comprising the **agfA** gene for detection of Salmonella
INVENTOR(S): Doran, James L., Brentwood Bay, Canada
Kay, William W., Victoria, Canada
Collinson, S. Karen, Brentwood Bay, Canada
Clouthier, Sharon C., Naniamo, Canada
PATENT ASSIGNEE(S): University of Victoria Innovation & Development Corp., Victoria, Canada (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5635617		19970603
APPLICATION INFO.:	US 1994-233788		19940426 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1993-54452, filed on 26 Apr 1993, now abandoned
DOCUMENT TYPE: Utility

FILE SEGMENT: Granted
PRIMARY EXAMINER: Campbell, Eggerton A.
LEGAL REPRESENTATIVE: Seed and Berry LLP
NUMBER OF CLAIMS: 5
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 26 Drawing Figure(s); 22 Drawing Page(s)
LINE COUNT: 3934
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 12 OF 18 USPATFULL
ACCESSION NUMBER: 96:82587 USPATFULL
TITLE: Ligands for flt3 receptors
INVENTOR(S): Lyman, Stewart D., Seattle, WA, United States
Beckmann, M. Patricia, Poulsbo, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5554512		19960910
APPLICATION INFO.:	US 1994-243545		19940511 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1994-209502, filed on 7 Mar 1994, now abandoned which is a continuation-in-part of Ser. No. US 1993-162407, filed on 3 Dec 1993, now abandoned which is a continuation-in-part of Ser. No. US 1993-111758, filed on 25 Aug 1993, now abandoned which is a continuation-in-part of Ser. No. US 1993-106463, filed on 12 Aug 1993, now abandoned which is a continuation-in-part of Ser. No. US 1993-68394, filed on 24 May 1993, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Walsh, Stephen G.
ASSISTANT EXAMINER: Spector, Lorraine M.
LEGAL REPRESENTATIVE: Malaska, Stephen L.
NUMBER OF CLAIMS: 21
EXEMPLARY CLAIM: 1
LINE COUNT: 2004
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 13 OF 18 USPATFULL
ACCESSION NUMBER: 95:99250 USPATFULL
TITLE: Type II Interleukin-1 receptors
INVENTOR(S): Sims, John E., Seattle, WA, United States
Cosman, David J., Bainbridge, WA, United States
Lupton, Stephen D., Seattle, WA, United States
Mosley, Bruce A., Seattle, WA, United States
Dower, Steven K., Redmond, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5464937		19951107
APPLICATION INFO.:	US 1994-242211		19940513 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1993-91519, filed on 12 Jul 1993, now patented, Pat. No. US 5350683, issued on 27 Sep 1994 which is a continuation of Ser. No. US 1991-701415, filed on 16 May 1991, now abandoned which is a continuation-in-part of Ser. No. US 1990-627071, filed on 13 Dec 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-573576, filed on 24 Aug 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-534193, filed

on 5 Jun 1990, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Walsh, Stephen G.
ASSISTANT EXAMINER: Ulm, John D.
LEGAL REPRESENTATIVE: Perkins, Patricia Anne
NUMBER OF CLAIMS: 4
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Figure(s); 4 Drawing Page(s)
LINE COUNT: 1901
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 14 OF 18 USPATFULL
ACCESSION NUMBER: 95:54319 USPATFULL
TITLE: DNA encoding a fusion receptor for oncostatin M and leukemia inhibitory factor
INVENTOR(S): Gearing, David P., Seattle, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5426048		19950620
APPLICATION INFO.:	US 1993-115370		19930831 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1991-797556, filed on 22 Nov 1991, now patented, Pat. No. US 5262522
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Draper, Garnette D.
ASSISTANT EXAMINER: Ulm, John D.
LEGAL REPRESENTATIVE: Seese, Kathryn A.
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 13 Drawing Figure(s); 13 Drawing Page(s)
LINE COUNT: 2172
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 15 OF 18 USPATFULL
ACCESSION NUMBER: 95:47842 USPATFULL
TITLE: Leukemia inhibitory factor receptors and fusion proteins
INVENTOR(S): Gearing, David P., Seattle, WA, United States
Beckmann, Patricia M., Poulsbo, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5420247		19950530
APPLICATION INFO.:	US 1993-119780		19930910 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1992-943843, filed on 11 Sep 1992, now patented, Pat. No. US 5284755 which is a continuation-in-part of Ser. No. US 1991-670608, filed on 13 Mar 1991, now abandoned which is a continuation-in-part of Ser. No. US 1990-626725, filed on 13 Dec 1990, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Draper, Garnette D.
ASSISTANT EXAMINER: Ulm, John D.
LEGAL REPRESENTATIVE: Anderson, Kathryn A., Wight, Christopher L.
NUMBER OF CLAIMS: 6
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 8 Drawing Figure(s); 8 Drawing Page(s)

LINE COUNT: 2543
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 16 OF 18 USPATFULL
ACCESSION NUMBER: 94:84190 USPATFULL
TITLE: DNA encoding type II interleukin-1 receptors
INVENTOR(S): Sims, John E., Seattle, WA, United States
Cosman, David J., Bainbridge, WA, United States
Lupton, Stephen D., Seattle, WA, United States
Mosley, Bruce A., Seattle, WA, United States
Dower, Steven K., Redmond, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5350683		19940927
APPLICATION INFO.:	US 1993-9151		19930712 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1991-701415, filed on 16 May 1991, now abandoned which is a continuation-in-part of Ser. No. US 1990-627071, filed on 13 Dec 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-573576, filed on 24 Aug 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-534193, filed on 5 Jun 1990, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Hill, Jr., Robert J.
ASSISTANT EXAMINER: Ulm, John R.
LEGAL REPRESENTATIVE: Perkins, Patricia Anne, Hallquist, Scott G., Wight, Christopher L.
NUMBER OF CLAIMS: 9
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Figure(s); 4 Drawing Page(s)
LINE COUNT: 1892
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 17 OF 18 USPATFULL
ACCESSION NUMBER: 94:11325 USPATFULL
TITLE: DNA encoding leukemia inhibitory factor receptors
INVENTOR(S): Gearing, David P., Seattle, WA, United States
Beckmann, M. Patricia, Poulsbo, WA, United States
PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5284755		19940208
APPLICATION INFO.:	US 1992-943843		19920911 (7)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1991-670608, filed on 13 Mar 1991, now abandoned which is a continuation-in-part of Ser. No. US 1990-626725, filed on 13 Dec 1990, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Hill, Jr, Robert J.
ASSISTANT EXAMINER: Ulm, John D.
LEGAL REPRESENTATIVE: Seese, Kathryn A., Wight, Christopher L.
NUMBER OF CLAIMS: 16
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT: 2486
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 18 OF 18 USPATFULL

ACCESSION NUMBER: 93:96237 USPATFULL

TITLE: Receptor for oncostatin M and leukemia inhibitory factor

INVENTOR(S): Gearing, David P., Seattle, WA, United States

PATENT ASSIGNEE(S): Immunex Corporation, Seattle, WA, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5262522		19931116	
APPLICATION INFO.:	US 1991-797556		19911122	(7)

DOCUMENT TYPE: Utility

FILE SEGMENT: Granted

PRIMARY EXAMINER: Hill, Jr., Robert J.

ASSISTANT EXAMINER: Ulm, John D.

LEGAL REPRESENTATIVE: Seese, Kathryn A.

NUMBER OF CLAIMS: 9

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 6 Drawing Figure(s); 8 Drawing Page(s)

LINE COUNT: 2133

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=>

L3	3	S	DORAN, JAMES/AU
L4	37	S	DORAN, JAMES L /AU
L5	8	S	L4 AND AGFA GENE
L6	0	S	WHITE, AARON/AU
L7	9	S	WHITE; AARON P/AU
L8	0	S	COLLINSON, KAREN
L9	36	S	COLLINSON, S KAREN/AU
L10	8	S	L9 AND AGFA GENE
L11	125	S	KAY, WILLIAM W/AU
L12	9	S	L11 AND AGFA GENE

2 ANSWER 1 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 2000:225999 BIOSIS
DOCUMENT NUMBER: PREV200000225999
TITLE: Salmonella enteritidis fimbriae displaying a heterologous epitope reveal a uniquely flexible structure and assembly mechanism.
AUTHOR(S): White, Aaron P.; Collinson, S. Karen; Banser, Pamela A.; Dolhaine, Daphne J.; **Kay, William W. (1)**
CORPORATE SOURCE: (1) Department of Biochemistry and Microbiology, University of Victoria, Victoria, British Columbia Canada
SOURCE: Journal of Molecular Biology, (Feb., 2000) Vol. 296, No. 2, pp. 361-372.
ISSN: 0022-2836.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English

L12 ANSWER 2 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1996:154902 BIOSIS
DOCUMENT NUMBER: PREV199698727037
TITLE: The location of four fimbrin-encoding genes, agfA, fimA, sefA and sefD, on the Salmonella enteritidis and/or S. typhimurium Xbak-BlnI genomic restriction maps.
AUTHOR(S): Collinson, S. Karen; Liu, Shu-Lin; Clouthier, Sharon C.; Banser, Pamela A.; Doran, James L.; Sanderson, Kenneth E.; **Kay, William W. (1)**
CORPORATE SOURCE: (1) Dep. Biochem. Microbiol., PO Box 3055, Petch Building, Univ. Victoria, Victoria, British Columbia V8W 3P6 Canada
SOURCE: Gene (Amsterdam), (1996) Vol. 169, No. 1, pp. 75-80.
ISSN: 0378-1119.
DOCUMENT TYPE: Article
LANGUAGE: English

L12 ANSWER 3 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1996:122597 BIOSIS
DOCUMENT NUMBER: PREV199698694732
TITLE: Salmonella enteritidis agfBAC operon encoding thin, aggregative fimbriae.
AUTHOR(S): Collinson, S. Karen; Clouthier, Sharon C.; Doran, James L.; Banser, Pamela A.; **Kay, William W. (1)**
CORPORATE SOURCE: (1) Dep. Biochem. Microbiol., Petch Build., Univ. Victoria, P.O. Box 3055, Victoria, BC V8W 3P6 Canada
SOURCE: Journal of Bacteriology, (1996) Vol. 178, No. 3, pp. 662-667.
ISSN: 0021-9193.
DOCUMENT TYPE: Article
LANGUAGE: English

L12 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:725786 CAPLUS
DOCUMENT NUMBER: 133:306338
TITLE: Use of the agfA fimbrin of Salmonella to present foreign proteins on the surface of a bacterial host
INVENTOR(S): White, Aaron P.; Doran, James L.; Collison, S. Karen; **Kay, William W.**
PATENT ASSIGNEE(S): Innovation and Development Corporation, University of Victoria, Can.
SOURCE: PCT Int. Appl., 139 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000060102	A2	20001012	WO 2000-CA356	20000405
WO 2000060102	A3	20010104		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-127888 P 19990405

L12 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:378296 CAPLUS
DOCUMENT NUMBER: 127:46035
TITLE: Salmonella gene agfA and encoded protein for nucleic acid-based or antibody-based infection diagnosis
INVENTOR(S): Doran, James L.; **Kay, William W.**; Collinson, S. Karen; Clouthier, Sharon C.
PATENT ASSIGNEE(S): University of Victoria Innovation & Development Corp., Can.
SOURCE: U.S., 85 pp. Cont.-in-part of U.S. Ser. No. 54,452, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5635617	A	19970603	US 1994-233788	19940426
CA 2161404	AA	19941110	CA 1994-2161404	19940426
CA 2161405	AA	19941110	CA 1994-2161405	19940426

PRIORITY APPLN. INFO.: US 1993-54452 19930426

L12 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:142753 CAPLUS
DOCUMENT NUMBER: 124:222288
TITLE: The location of four fimbrin-encoding genes, agfA, fimA, sefA and sefD, on the Salmonella enteritidis and/or S. typhimurium XbaI-BlnI genomic restriction maps
AUTHOR(S): Collinson, S. Karen; Liu, Shu-Lin; Clouthier, Sharon C.; Banser, Pamela A.; Doran, James L.; Sanderson, Kenneth E.; **Kay, William W.**
CORPORATE SOURCE: Department of Biochemistry and Microbiology, and The Canadian Bacterial Diseases Network, University of Victoria, Victoria, BC, V8W 3P6, Can.
SOURCE: Gene (1996), 169(1), 75-80
CODEN: GENED6; ISSN: 0378-1119
DOCUMENT TYPE: Journal
LANGUAGE: English

L12 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:75089 CAPLUS
DOCUMENT NUMBER: 124:166930
TITLE: Salmonella enteritidis agfBAC operon encoding thin, aggregative fimbriae
AUTHOR(S): Collinson, S. Karen; Clouthier, Sharon C.; Doran, James L.; Banser, Pamela A.; **Kay, William W.**

CORPORATE SOURCE: Dep. Biochem. Microbiol., Univ. Victoria, Victoria, BC, V8W 3P6, Can.
SOURCE: J. Bacteriol. (1996), 178(3), 662-7
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English

L12 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:428858 CAPLUS
DOCUMENT NUMBER: 122:212102
TITLE: Cloning of Salmonella genes and vaccines consisting of Salmonella proteins or attenuated Salmonella
INVENTOR(S): **Kay, William W.**; Collinson, S. Karen; Clouthier, Sharon C.; Doran, James L.
PATENT ASSIGNEE(S): University of Victoria Innovation and Development, Can.; King, Joshua
SOURCE: PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9425598	A2	19941110	WO 1994-IB207	19940426
WO 9425598	A3	19950601		
W: AU, BB, BG, BR, BY, CA, CN, CZ, FI, GE, HU, JP, KG, KP, KR, KZ, LK, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SI, SK, TJ, TT, UA, UZ, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2161404	AA	19941110	CA 1994-2161404	19940426
CA 2161405	AA	19941110	CA 1994-2161405	19940426
AU 9470084	A1	19941121	AU 1994-70084	19940426
EP 696322	A1	19960214	EP 1994-919001	19940426
R: CH, DE, DK, ES, FR, GB, IT, LI, NL				

PRIORITY APPLN. INFO.: US 1993-54452 19930426
WO 1994-IB207 19940426

L12 ANSWER 9 OF 9 USPATFULL
ACCESSION NUMBER: 97:47521 USPATFULL
TITLE: Methods and compositions comprising the **agfA gene** for detection of Salmonella
INVENTOR(S): Doran, James L., Brentwood Bay, Canada
Kay, William W., Victoria, Canada
Collinson, S. Karen, Brentwood Bay, Canada
Clouthier, Sharon C., Naniamo, Canada
PATENT ASSIGNEE(S): University of Victoria Innovation & Development Corp., Victoria, Canada (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5635617		19970603
APPLICATION INFO.:	US 1994-233788		19940426 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1993-54452, filed on 26 Apr 1993, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Campbell, Eggerton A.
LEGAL REPRESENTATIVE: Seed and Berry LLP
NUMBER OF CLAIMS: 5
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 26 Drawing Figure(s); 22 Drawing Page(s)

LINE COUNT: 3934
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

0 ANSWER 1 OF 8 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 2000:225999 BIOSIS
DOCUMENT NUMBER: PREV200000225999
TITLE: Salmonella enteritidis fimbriae displaying a heterologous epitope reveal a uniquely flexible structure and assembly mechanism.
AUTHOR(S): White, Aaron P.; **Collinson, S. Karen**; Banser, Pamela A.; Dolhaine, Daphne J.; Kay, William W. (1)
CORPORATE SOURCE: (1) Department of Biochemistry and Microbiology, University of Victoria, Victoria, British Columbia Canada
SOURCE: Journal of Molecular Biology, (Feb., 2000) Vol. 296, No. 2, pp. 361-372.
ISSN: 0022-2836.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English

L10 ANSWER 2 OF 8 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1996:154902 BIOSIS
DOCUMENT NUMBER: PREV199698727037
TITLE: The location of four fimbrin-encoding genes, agfA, fimA, sefA and sefD, on the Salmonella enteritidis and/or S. typhimurium Xbak-BlnI genomic restriction maps.
AUTHOR(S): **Collinson, S. Karen**; Liu, Shu-Lin; Clouthier, Sharon C.; Banser, Pamela A.; Doran, James L.; Sanderson, Kenneth E.; Kay, William W. (1)
CORPORATE SOURCE: (1) Dep. Biochem. Microbiol., PO Box 3055, Petch Building, Univ. Victoria, Victoria, British Columbia V8W 3P6 Canada
SOURCE: Gene (Amsterdam), (1996) Vol. 169, No. 1, pp. 75-80.
ISSN: 0378-1119.
DOCUMENT TYPE: Article
LANGUAGE: English

L10 ANSWER 3 OF 8 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1996:122597 BIOSIS
DOCUMENT NUMBER: PREV199698694732
TITLE: Salmonella enteritidis agfBAC operon encoding thin, aggregative fimbriae.
AUTHOR(S): **Collinson, S. Karen**; Clouthier, Sharon C.; Doran, James L.; Banser, Pamela A.; Kay, William W. (1)
CORPORATE SOURCE: (1) Dep. Biochem. Microbiol., Petch Build., Univ. Victoria, P.O. Box 3055, Victoria, BC V8W 3P6 Canada
SOURCE: Journal of Bacteriology, (1996) Vol. 178, No. 3, pp. 662-667.
ISSN: 0021-9193.
DOCUMENT TYPE: Article
LANGUAGE: English

L10 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:378296 CAPLUS
DOCUMENT NUMBER: 127:46035
TITLE: Salmonella gene agfA and encoded protein for nucleic acid-based or antibody-based infection diagnosis
INVENTOR(S): Doran, James L.; Kay, William W.; **Collinson, S. Karen**; Clouthier, Sharon C.
PATENT ASSIGNEE(S): University of Victoria Innovation & Development Corp., Can.
SOURCE: U.S., 85 pp. Cont.-in-part of U.S. Ser. No. 54,452, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5635617	A	19970603	US 1994-233788	19940426
CA 2161404	AA	19941110	CA 1994-2161404	19940426
CA 2161405	AA	19941110	CA 1994-2161405	19940426
PRIORITY APPLN. INFO.:			US 1993-54452	19930426

L10 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:142753 CAPLUS
DOCUMENT NUMBER: 124:222288
TITLE: The location of four fimbrin-encoding genes, agfA, fimA, sefA and sefD, on the Salmonella enteritidis and/or S. typhimurium XbaI-BlnI genomic restriction maps
AUTHOR(S): **Collinson, S. Karen**; Liu, Shu-Lin; Clouthier, Sharon C.; Banser, Pamela A.; Doran, James L.; Sanderson, Kenneth E.; Kay, William W.
CORPORATE SOURCE: Department of Biochemistry and Microbiology, and The Canadian Bacterial Diseases Network, University of Victoria, Victoria, BC, V8W 3P6, Can.
SOURCE: Gene (1996), 169(1), 75-80
CODEN: GENED6; ISSN: 0378-1119
DOCUMENT TYPE: Journal
LANGUAGE: English

L10 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:75089 CAPLUS
DOCUMENT NUMBER: 124:166930
TITLE: Salmonella enteritidis agfBAC operon encoding thin, aggregative fimbriae
AUTHOR(S): **Collinson, S. Karen**; Clouthier, Sharon C.; Doran, James L.; Banser, Pamela A.; Kay, William W.
CORPORATE SOURCE: Dep. Biochem. Microbiol., Univ. Victoria, Victoria, BC, V8W 3P6, Can.
SOURCE: J. Bacteriol. (1996), 178(3), 662-7
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English

L10 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:428858 CAPLUS
DOCUMENT NUMBER: 122:212102
TITLE: Cloning of Salmonella genes and vaccines consisting of Salmonella proteins or attenuated Salmonella
INVENTOR(S): Kay, William W.; **Collinson, S. Karen**; Clouthier, Sharon C.; Doran, James L.
PATENT ASSIGNEE(S): University of Victoria Innovation and Development, Can.; King, Joshua
SOURCE: PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9425598	A2	19941110	WO 1994-IB207	19940426
WO 9425598	A3	19950601		

W: AU, BB, BG, BR, BY, CA, CN, CZ, FI, GE, HU, JP, KG, KP, KR, KZ, LK, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SI, SK, TJ, TT, UA, UZ, VN
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,

BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

CA 2161404	AA	19941110	CA 1994-2161404	19940426
CA 2161405	AA	19941110	CA 1994-2161405	19940426
AU 9470084	A1	19941121	AU 1994-70084	19940426
EP 696322	A1	19960214	EP 1994-919001	19940426

R: CH, DE, DK, ES, FR, GB, IT, LI, NL

PRIORITY APPLN. INFO.:	US 1993-54452	19930426
	WO 1994-IB207	19940426

L10 ANSWER 8 OF 8 USPATFULL

ACCESSION NUMBER:	97:47521 USPATFULL
TITLE:	Methods and compositions comprising the **agfA gene** for detection of Salmonella
INVENTOR(S):	Doran, James L., Brentwood Bay, Canada Kay, William W., Victoria, Canada **Collinson, S. Karen**, Brentwood Bay, Canada Clouthier, Sharon C., Naniamo, Canada
PATENT ASSIGNEE(S):	University of Victoria Innovation & Development Corp., Victoria, Canada (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5635617		19970603
APPLICATION INFO.:	US 1994-233788		19940426 (8)

RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1993-54452, filed on 26 Apr 1993, now abandoned
DOCUMENT TYPE:	Utility
FILE SEGMENT:	Granted
PRIMARY EXAMINER:	Campbell, Eggerton A.
LEGAL REPRESENTATIVE:	Seed and Berry LLP

L7 ANSWER 1 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 2001:452845 BIOSIS
DOCUMENT NUMBER: PREV200100452845
TITLE: Structure and characterization of AgfB from Salmonella enteritidis thin aggregative fimbriae.
AUTHOR(S): **White, Aaron P.**; Collinson, S. Karen; Banser, Pamela A.; Gibson, Deanna L.; Paetzel, Mark; Strynadka, Natalie C. J.; Kay, William W. (1)
CORPORATE SOURCE: (1) Department of Biochemistry and Microbiology, University of Victoria, Victoria, British Columbia, V8W 3P6: wkay@uvic.ca Canada
SOURCE: Journal of Molecular Biology, (24 August, 2001) Vol. 311, No. 4, pp. 735-749. print.
ISSN: 0022-2836.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English

L7 ANSWER 2 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 2000:225999 BIOSIS
DOCUMENT NUMBER: PREV200000225999
TITLE: Salmonella enteritidis fimbriae displaying a heterologous epitope reveal a uniquely flexible structure and assembly mechanism.
AUTHOR(S): **White, Aaron P.**; Collinson, S. Karen; Banser, Pamela A.; Dolhaine, Daphne J.; Kay, William W. (1)
CORPORATE SOURCE: (1) Department of Biochemistry and Microbiology, University of Victoria, Victoria, British Columbia Canada
SOURCE: Journal of Molecular Biology, (Feb., 2000) Vol. 296, No. 2, pp. 361-372.
ISSN: 0022-2836.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English

L7 ANSWER 3 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1999:259399 BIOSIS
DOCUMENT NUMBER: PREV199900259399
TITLE: High efficiency gene replacement in Salmonella enteritidis: Chimeric fimbrins containing a T-cell epitope from Leishmania major.
AUTHOR(S): **White, Aaron P.**; Collinson, S. Karen; Burian, Jan; Clouthier, Sharon C.; Banser, Pamela A.; Kay, William W. (1)
CORPORATE SOURCE: (1) Department of Biochemistry and Microbiology, University of Victoria, Petch Bldg., Victoria, BC, V8W 3P6 Canada
SOURCE: Vaccine, (April 23, 1999) Vol. 17, No. 17, pp. 2150-2161.
ISSN: 0264-410X.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English

L7 ANSWER 4 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1998:479009 BIOSIS
DOCUMENT NUMBER: PREV199800479009
TITLE: Periplasmic and fimbrial SefA from Salmonella enteritidis.
AUTHOR(S): Clouthier, Sharon C.; Collinson, S. Karen; Lippert, Dustin; Ausio, Juan; **White, Aaron P.**; Kay, William W. (1)
CORPORATE SOURCE: (1) Dep. Biochem. Microbiol., Petch Build., Univ. Victoria, P.O. Box 3055, Victoria, BC V8W 3P6 Canada
SOURCE: Biochimica et Biophysica Acta, (Sept. 8, 1998) Vol. 1387, No. 1-2, pp. 355-368.
ISSN: 0006-3002.
DOCUMENT TYPE: Article

LANGUAGE: English

L7 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:615351 CAPLUS
DOCUMENT NUMBER: 135:315014
TITLE: Structure and Characterization of AgfB from Salmonella enteritidis Thin Aggregative Fimbriae
AUTHOR(S): **White, Aaron P.**; Collinson, S. Karen; Banser, Pamela A.; Gibson, Deanna L.; Paetzel, Mark; Strynadka, Natalie C. J.; Kay, William W.
CORPORATE SOURCE: Department of Biochemistry and Microbiology, University of Victoria, Victoria, BC, V8W 3P6, Can.
SOURCE: J. Mol. Biol. (2001), 311(4), 735-749
CODEN: JMOBAK; ISSN: 0022-2836
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:725786 CAPLUS
DOCUMENT NUMBER: 133:306338
TITLE: Use of the agfA fimbrin of Salmonella to present foreign proteins on the surface of a bacterial host
INVENTOR(S): **White, Aaron P.**; Doran, James L.; Collison, S. Karen; Kay, William W.
PATENT ASSIGNEE(S): Innovation and Development Corporation, University of Victoria, Can.
SOURCE: PCT Int. Appl., 139 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000060102	A2	20001012	WO 2000-CA356	20000405
WO 2000060102	A3	20010104		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-127888 P 19990405

L7 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:96563 CAPLUS
DOCUMENT NUMBER: 132:319571
TITLE: Salmonella enteritidis fimbriae displaying a heterologous epitope reveal a uniquely flexible structure and assembly mechanism
AUTHOR(S): **White, Aaron P.**; Collinson, S. Karen; Banser, Pamela A.; Dolhaine, Daphne J.; Kay, William W.
CORPORATE SOURCE: Department of Biochemistry and Microbiology, University of Victoria, Victoria, BC, Can.
SOURCE: J. Mol. Biol. (2000), 296(2), 361-372
CODEN: JMOBAK; ISSN: 0022-2836

PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:318974 CAPLUS
DOCUMENT NUMBER: 131:154143
TITLE: High efficiency gene replacement in Salmonella enteritidis: chimeric fimbrins containing a T-cell epitope from Leishmania major
AUTHOR(S): **White, Aaron P.**; Collinson, S. Karen; Burian, Jan; Clouthier, Sharon C.; Banser, Pamela A.; Kay, William W.
CORPORATE SOURCE: Department of Biochemistry and Microbiology, University of Victoria, Victoria, BC, V8W 3P6, Can.
SOURCE: Vaccine (1999), 17(17), 2150-2161
CODEN: VACCDE; ISSN: 0264-410X
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:579347 CAPLUS
DOCUMENT NUMBER: 130:1433
TITLE: Periplasmic and fimbrial SefA from Salmonella enteritidis
AUTHOR(S): Clouthier, Sharon C.; Collinson, S. Karen; Lippert, Dustin; Ausio, Juan; **White, Aaron P.**; Kay, William W.
CORPORATE SOURCE: Department of Biochemistry and Microbiology, University of Victoria, Victoria, BC, V8W 3P6, Can.
SOURCE: Biochim. Biophys. Acta (1998), 1387(1-2), 355-368
CODEN: BBACAQ; ISSN: 0006-3002
PUBLISHER: Elsevier Science B.V.

5 ANSWER 1 OF 8 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1996:154902 BIOSIS
DOCUMENT NUMBER: PREV199698727037
TITLE: The location of four fimbrin-encoding genes, agfA, fimA, sefA and sefD, on the Salmonella enteritidis and/or S. typhimurium Xbak-BlnI genomic restriction maps.
AUTHOR(S): Collinson, S. Karen; Liu, Shu-Lin; Clouthier, Sharon C.; Banser, Pamela A.; **Doran, James L.**; Sanderson, Kenneth E.; Kay, William W. (1)
CORPORATE SOURCE: (1) Dep. Biochem. Microbiol., PO Box 3055, Petch Building, Univ. Victoria, Victoria, British Columbia V8W 3P6 Canada
SOURCE: Gene (Amsterdam), (1996) Vol. 169, No. 1, pp. 75-80. ISSN: 0378-1119.
DOCUMENT TYPE: Article
LANGUAGE: English

L5 ANSWER 2 OF 8 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1996:122597 BIOSIS
DOCUMENT NUMBER: PREV199698694732
TITLE: Salmonella enteritidis agfBAC operon encoding thin, aggregative fimbriae.
AUTHOR(S): Collinson, S. Karen; Clouthier, Sharon C.; **Doran, James L.**; Banser, Pamela A.; Kay, William W. (1)
CORPORATE SOURCE: (1) Dep. Biochem. Microbiol., Petch Build., Univ. Victoria, P.O. Box 3055, Victoria, BC V8W 3P6 Canada
SOURCE: Journal of Bacteriology, (1996) Vol. 178, No. 3, pp. 662-667. ISSN: 0021-9193.
DOCUMENT TYPE: Article
LANGUAGE: English

L5 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:725786 CAPLUS
DOCUMENT NUMBER: 133:306338
TITLE: Use of the agfA fimbrin of Salmonella to present foreign proteins on the surface of a bacterial host
INVENTOR(S): White, Aaron P.; **Doran, James L.**; Collison, S. Karen; Kay, William W.
PATENT ASSIGNEE(S): Innovation and Development Corporation, University of Victoria, Can.
SOURCE: PCT Int. Appl., 139 pp. CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000060102	A2	20001012	WO 2000-CA356	20000405
WO 2000060102	A3	20010104		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-127888 P 19990405

L5 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:378296 CAPLUS

DOCUMENT NUMBER: 127:46035
TITLE: Salmonella gene agfA and encoded protein for nucleic acid-based or antibody-based infection diagnosis
INVENTOR(S): **Doran, James L.**; Kay, William W.; Collinson, S. Karen; Clouthier, Sharon C.
PATENT ASSIGNEE(S): University of Victoria Innovation & Development Corp., Can.
SOURCE: U.S., 85 pp. Cont.-in-part of U.S. Ser. No. 54,452, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5635617	A	19970603	US 1994-233788	19940426
CA 2161404	AA	19941110	CA 1994-2161404	19940426
CA 2161405	AA	19941110	CA 1994-2161405	19940426

PRIORITY APPLN. INFO.: US 1993-54452 19930426

L5 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:142753 CAPLUS
DOCUMENT NUMBER: 124:222288
TITLE: The location of four fimbrin-encoding genes, agfA, fimA, sefA and sefD, on the Salmonella enteritidis and/or S. typhimurium XbaI-BlnI genomic restriction maps
AUTHOR(S): Collinson, S. Karen; Liu, Shu-Lin; Clouthier, Sharon C.; Banser, Pamela A.; **Doran, James L.**; Sanderson, Kenneth E.; Kay, William W.
CORPORATE SOURCE: Department of Biochemistry and Microbiology, and The Canadian Bacterial Diseases Network, University of Victoria, Victoria, BC, V8W 3P6, Can.
SOURCE: Gene (1996), 169(1), 75-80
CODEN: GENED6; ISSN: 0378-1119
DOCUMENT TYPE: Journal
LANGUAGE: English

L5 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:75089 CAPLUS
DOCUMENT NUMBER: 124:166930
TITLE: Salmonella enteritidis agfBAC operon encoding thin, aggregative fimbriae
AUTHOR(S): Collinson, S. Karen; Clouthier, Sharon C.; **Doran, James L.**; Banser, Pamela A.; Kay, William W.
CORPORATE SOURCE: Dep. Biochem. Microbiol., Univ. Victoria, Victoria, BC, V8W 3P6, Can.
SOURCE: J. Bacteriol. (1996), 178(3), 662-7
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English

L5 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:428858 CAPLUS
DOCUMENT NUMBER: 122:212102
TITLE: Cloning of Salmonella genes and vaccines consisting of Salmonella proteins or attenuated Salmonella
INVENTOR(S): Kay, William W.; Collinson, S. Karen; Clouthier, Sharon C.; **Doran, James L.**
PATENT ASSIGNEE(S): University of Victoria Innovation and Development, Can.; King, Joshua
SOURCE: PCT Int. Appl., 66 pp.

CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9425598	A2	19941110	WO 1994-IB207	19940426
WO 9425598	A3	19950601		
W: AU, BB, BG, BR, BY, CA, CN, CZ, FI, GE, HU, JP, KG, KP, KR, KZ, LK, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SI, SK, TJ, TT, UA, UZ, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2161404	AA	19941110	CA 1994-2161404	19940426
CA 2161405	AA	19941110	CA 1994-2161405	19940426
AU 9470084	A1	19941121	AU 1994-70084	19940426
EP 696322	A1	19960214	EP 1994-919001	19940426
R: CH, DE, DK, ES, FR, GB, IT, LI, NL				

PRIORITY APPLN. INFO.: US 1993-54452 19930426
WO 1994-IBZ07 19940426

L5 ANSWER 8 OF 8 USPATFULL
ACCESSION NUMBER: 97:47521 USPATFULL
TITLE: Methods and compositions comprising the **agfA gene** for detection of Salmonella
INVENTOR(S): **Doran, James L.**, Brentwood Bay, Canada
Kay, William W., Victoria, Canada
Collinson, S. Karen, Brentwood Bay, Canada
Clouthier, Sharon C., Naniamo, Canada
PATENT ASSIGNEE(S): University of Victoria Innovation & Development Corp., Victoria, Canada (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5635617		19970603
APPLICATION INFO.:	US 1994-233788		19940426 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1993-54452, filed on 26 Apr 1993, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Campbell, Eggerton A.
LEGAL REPRESENTATIVE: Seed and Berry LLP
NUMBER OF CLAIMS: 5
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 26 Drawing Figure(s); 22 Drawing Page(s)
LINE COUNT: 3934
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> fil reg
COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
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http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

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E1            1     AGF 56/CN
E2            1     AGF1/CN
E3            0 --> AGFA/CN
E4            1     AGFA 10/CN
E5            1     AGFA 80/CN

=> e agfa gene/cn 5
E1            1     AGFA 10/CN
E2            1     AGFA 80/CN
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Searched by: Mary Hale 308-4258 CM-1 12D16

10/d
543407

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E3            0 --> AGFA GENE/CN
E4            1     AGGD/CN
E5            1     AGGERLIT A/CN

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E1            1     AGFA 10/CN
E2            1     AGFA 80/CN
E3            0 --> AGFB/CN
E4            1     AGGD/CN
E5            1     AGGERLIT A/CN

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E2            1     CSG-DI 0600/CN
E3            0 --> CSG1/CN
E4            1     CSGL 0803/CN
E5            1     CSGL 0803P/CN

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E3            0 --> CSGB/CN
E4            1     CSGL 0803/CN
E5            1     CSGL 0803P/CN

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COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.93     217.47

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=> s agfa or agfb or csga or csgb
            49 AGFA
             6 AGFB
            38 CSGA
            12 CSGB
L1          93 AGFA OR AGFB OR CSGA OR CSGB

=> s (agfa or agfb or csga or csgb)(w)gene
            49 AGFA
             6 AGFB
            38 CSGA
            12 CSGB
       4792908 GENE
L2          60 (AGFA OR AGFB OR CSGA OR CSGB)(W)GENE

=> dis his

     (FILE 'CAOLD' ENTERED AT 12:43:29 ON 07 DEC 2001)
               DEL HIS Y


Searched by: Mary Hale 308-4258 CM-1 12D16
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     FILE 'REGISTRY' ENTERED AT 12:43:39 ON 07 DEC 2001
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                E AGFA GENE/CN 5
                E AGFB/CN 5
                E CSG1/CN 5
                E CSGB/CN 5

     FILE 'GENBANK' ENTERED AT 12:45:14 ON 07 DEC 2001
L1            93 S AGFA OR AGFB OR CSGA OR CSGB
L2            60 S (AGFA OR AGFB OR CSGA OR CSGB)(W)GENE

=> fil medl,caplus,biotechno,biosis,embase,wpids;s l2 or (agfa or agfb or csga or
csgb)(w)gene!
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                    21.03     238.50

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
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CA SUBSCRIBER PRICE                                     0.00     -12.32

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L3            23 FILE MEDLINE
L4            29 FILE CAPLUS
L5            22 FILE BIOTECHNO
L6            31 FILE BIOSIS
L7            23 FILE EMBASE
L8             3 FILE WPIDS

TOTAL FOR ALL FILES
L9           131 L2 OR (AGFA OR AGFB OR CSGA OR CSGB)(W) GENE!

=> s l9 and (salmonell? or escherichia or enerobacteri?)
L10           12 FILE MEDLINE
L11           16 FILE CAPLUS
L12           11 FILE BIOTECHNO
L13           15 FILE BIOSIS
L14           12 FILE EMBASE
L15            3 FILE WPIDS

TOTAL FOR ALL FILES
L16           69 L9 AND (SALMONELL? OR ESCHERICHIA OR ENEROBACTERI?)


Searched by: Mary Hale 308-4258 CM-1 12D16
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=> s l9 and enterobacter?
L17 0 FILE MEDLINE
L18 2 FILE CAPLUS
L19 0 FILE BIOTECHNO
L20 16 FILE BIOSIS
L21 0 FILE EMBASE
L22 3 FILE WPIDS

TOTAL FOR ALL FILES
L23 21 L9 AND ENTEROBACTER?

=> s (l16 or l23) and (epitope? or antigen? or sequence? or protein)
L24 11 FILE MEDLINE
L25 14 FILE CAPLUS
L26 8 FILE BIOTECHNO
L27 13 FILE BIOSIS
L28 9 FILE EMBASE
L29 3 FILE WPIDS

TOTAL FOR ALL FILES
L30 58 (L16 OR L23) AND (EPITOPE? OR ANTIGEN? OR SEQUENCE? OR PROTEIN)

=> dup rem l30
PROCESSING COMPLETED FOR L30
L31 22 DUP REM L30 (36 DUPLICATES REMOVED)

=> d cbib abs 1-22

L31 ANSWER 1 OF 22 CAPLUS COPYRIGHT 2001 ACS DUPLICATE 1
2000:725786 Document No. 133:306338 Use of the agfA fimbrin of **Salmonella** to present foreign **proteins** on the surface of a bacterial host. White, Aaron P.; Doran, James L.; Collison, S. Karen; Kay, William W. (Innovation and Development Corporation, University of Victoria, Can.). PCT Int. Appl. WO 2000060102 A2 20001012, 139 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-CA356 20000405. PRIORITY: US 1999-PV127888 19990405.

AB A method of generating chimeric genes encoding a fusion product of the agfA fimbrin and a foreign **protein,** such as an **antigen** , in a **Salmonella** host by chromosomal gene replacement is described. One embodiment of the invention is exemplified by the expression of a model **epitope** (PT3) obtained from the GP63 **protein** of Leishmania major, by formation of recombinant **agfA genes** encoding PT3 fusing **proteins** recombined at 10 different sites throughout the **agfA gene**. These fusions are shown to be expressed in the thin aggregative fimbriae on the surface of bacterial cell. The AgfA fimbrin of **Salmonella** (CsgA for E. coli) provides a flexible and stable vehicle for the expression of foreign **epitopes** in **enterobacteriaceae** and the subsequent thin aggregative fimbrae (curli) expression product provide an ideal organelle for presentation of the foreign **epitopes** at the cell surface.

L31 ANSWER 2 OF 22 CAPLUS COPYRIGHT 2001 ACS
2000:359067 Document No. 133:262151 Curli loci of Shigella spp..

Searched by: Mary Hale 308-4258 CM-1 12D16

Sakellaris, Harry; Hannink, Nerissa K.; Rajakumar, Kumar; Bulach, Dieter; Hunt, Meredith; Sasakawa, Chihiro; Adler, Ben (Department of Microbiology, Monash University, Clayton, 3800, Australia). Infect. Immun., 68(6), 3780-3783 (English) 2000. CODEN: INFIBR. ISSN: 0019-9567. Publisher: American Society for Microbiology.

AB An unstable chromosomal element encoding multiple antibiotic resistance in Shigella flexneri serotype 2a was found to include **sequences** homologous to the csg genes encoding curli in **Escherichia** coli and **Salmonella** enterica serovar Typhimurium. As curli have been implicated in the virulence of serovar Typhimurium, we investigated the csg loci in all four species of Shigella. DNA sequencing and PCR anal. showed that the csg loci of a wide range of Shigella strains, of diverse serotypes and different geog. distributions, were almost universally disrupted by deletions or insertions, indicating the existence of a strong selective pressure against the expression of curli. Strains of enteroinvasive E. coli (EIEC), which share virulence traits with Shigella spp. and cause similar diseases in humans, also possessed insertions or deletions in the csg locus or were otherwise unable to produce curli. Since the prodn. of curli is a widespread trait in environmental isolates of E. coli, our results suggest that genetic lesions that abolish curli prodn. in the closely related genus Shigella and in EIEC are pathoadaptive mutations.

L31 ANSWER 3 OF 22 MEDLINE DUPLICATE 2

2000497207 Document Number: 20430104. PubMed ID: 10972801. The Myxococcus xanthus socE and **csgA genes** are regulated by the stringent response. Crawford E W Jr; Shimkets L J. (Department of Microbiology, University of Georgia, Athens 30602-2605, USA.) MOLECULAR MICROBIOLOGY, (2000 Aug) 37 (4) 788-99. Journal code: MOM; 8712028. ISSN: 0950-382X. Pub. country: ENGLAND: United Kingdom. Language: English.

AB Disruption of the Myxococcus xanthus socE gene bypasses the requirement for the cell contact-dependent C-signalling system mediated by CsgA and restores fruiting body morphogenesis and spore differentiation. The socE gene has been identified by genetic complementation, cloned and **sequenced.** SocE is highly basic, unique and is predicted to be a soluble **protein** with a molecular size of 53. 6 kDa. The socE and **csgA genes** have opposite transcription patterns during the M. xanthus life cycle. socE expression is high in growing cells and declines during the early stages of development. Expression of csgA is low in vegetative cells and increases during development. socE transcription is negatively regulated by the stringent response, the major amino acid-sensing pathway in M. xanthus. A relA null mutation, which eliminates the stringent response, prevents the decline in socE expression normally observed at the onset of development. CsgA is positively regulated by the stringent response and is negatively regulated by socE. A relA mutation virtually eliminates developmental csgA expression. Expression of socE in **Escherichia** coli leads to a rapid loss of viability in relA- cells during stationary phase, suggesting a relationship with the stringent response.

L31 ANSWER 4 OF 22 BIOSIS COPYRIGHT 2001 BIOSIS

2000:225999 Document No.: PREV200000225999. **Salmonella** enteritidis fimbriae displaying a heterologous **epitope** reveal a uniquely flexible structure and assembly mechanism. White, Aaron P.; Collinson, S. Karen; Banser, Pamela A.; Dolhaine, Daphne J.; Kay, William W. (1). (1) Department of Biochemistry and Microbiology, University of Victoria, Victoria, British Columbia Canada. Journal of Molecular Biology, (Feb., 2000) Vol. 296, No. 2, pp. 361-372. ISSN: 0022-2836. Language: English. Summary Language: English.

AB Two distinct **Salmonella** fimbrins, AgfA and SefA, comprising thin aggregative fimbriae SEF17 and SEF14, respectively, were each genetically engineered to carry PT3, an alpha-helical 16-amino acid Leishmania T-cell

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epitope derived from the metalloprotease gp63. To identify regions within AgfA and SefA fimbrins amenable to replacement with this **epitope**, PCR-generated chimeric fimbrin genes were constructed and used to replace the native chromosomal agfA and sefA genes in **Salmonella** enteritidis. Immunoblot analysis using anti-SEF17 and anti-PT3 sera demonstrated that all ten AgfA chimeric fimbrin **proteins** were expressed by S. enteritidis under normal growth conditions. Immunoelectron microscopy confirmed that eight of the AgfA::PT3 **proteins** were effectively assembled into cell surface-exposed fimbriae. The PT3 replacements in AgfA altered Congo red (CR) binding, cell-cell adhesion and cell surface properties of S. enteritidis to varying degrees. However, these chimeric fimbriae were still highly stable, being resistant to proteinase K digestion and requiring harsh formic acid treatment for depolymerization. In marked contrast to AgfA, none of the chimeric SefA **proteins** were expressed or assembled into fimbriae. Since each PT3 replacement constituted over 10% of the AgfA amino acid **sequence** and all ten replacements collectively represented greater than 75% of the entire AgfA primary **sequence**, the ability of AgfA to accept large **sequence** substitutions and still assemble into fibers is unique among fimbriae and other structural **proteins**. This structural flexibility may be related to the novel fivefold repeating **sequence** of AgfA and its recently proposed structure Proper formation of chimeric fimbrial fibers suggests an unusual assembly mechanism for thin aggregative fimbriae which tolerates aberrant structures. This study opens a range of possibilities for **Salmonella** thin aggregative fimbriae as a carrier of heterologous **epitopes** and as an experimental model for studies of **protein** structure.

L31 ANSWER 5 OF 22 MEDLINE DUPLICATE 3

1999314153 Document Number: 99314153. PubMed ID: 10386375. Non-curliation of **Escherichia** coli O78:K80 isolates associated with IS1 insertion in csgB and reduced persistence in poultry infection. La Ragione R M; Collighan R J; Woodward M J. (Bacteriology Department, Veterinary Laboratories Agency, Addlestone, Surrey, UK.) FEMS MICROBIOLOGY LETTERS, (1999 Jun 15) 175 (2) 247-53. Journal code: FML; 7705721. ISSN: 0378-1097. Pub. country: Netherlands. Language: English.

AB The elaboration of curli fimbriae by **Escherichia** coli is associated with the development of a lacy colony morphology when grown on colonisation factor **antigen** agar at 25 degrees C. Avian colisepticaemia E. coli isolates screened for curliation by this culture technique showed lacy and smooth colonial morphologies and the genetic basis of the non-curliated smooth colonial phenotype was analysed. Two smooth E. coli O78:K80 isolates possessed about 40 copies of the IS1 element within their respective genomes of which one copy insertionally inactivated the **csgB gene**, the nucleator gene for curli fibril formation. One of these two isolates also possessed a defective rpoS gene which is a known regulator of curli expression. In the day-old chick model, both smooth isolates were as invasive as a known virulent O78:K80 isolate as determined by extent of liver and spleen colonisation post oral inoculation but were less persistent in terms of caecal colonisation.

L31 ANSWER 6 OF 22 MEDLINE DUPLICATE 4

1999413234 Document Number: 99413234. PubMed ID: 10483736. Involvement of the Cpx signal transduction pathway of E. coli in biofilm formation. Dorel C; Vidal O; Prigent-Combaret C; Vallet I; Lejeune P. (Laboratoire de Genetique Moleculaire des Microorganismes et des Interactions Cellulaires, CNRS UMR 5577, Institut National des Sciences Appliquees de Lyon, Villeurbanne, France.. dorel@insa.insa-lyon.fr) . FEMS MICROBIOLOGY LETTERS, (1999 Sep 1) 178 (1) 169-75. Journal code: FML; 7705721. ISSN:

0378-1097. Pub. country: Netherlands. Language: English.

AB In a genetic screening directed to identify genes involved in biofilm formation, mutations in the cpxA gene were found to reduce biofilm formation by affecting microbial adherence to solid surfaces. This effect was detected in **Escherichia** coli K12 as well as in E. coli strains isolated from patients with catheter-related bacteremia. We show that the negative effect of the cpxA mutation on biofilm formation results from a decreased transcription of the curlin encoding **csgA gene**. The effect of the cpxA mutation could not be observed in cpxR- mutants, suggesting that they affect the same regulatory pathway. The cpxA101 mutation abolishes cpxA phosphatase activity and results in the accumulation of phosphorylated CpxR. Features of the strain carrying the cpxA101 mutation are a reduced ability to form biofilm and low levels of csgA transcription. Our results indicate that the cpxA gene increases the levels of csgA transcription by dephosphorylation of CpxR, which acts as a negative regulator at csgA. Thus, we propose the existence of a new signal transduction pathway involved in the adherence process in addition to the EnvZ-OmpR two-component system.

L31 ANSWER 7 OF 22 BIOSIS COPYRIGHT 2001 BIOSIS

1998:304719 Document No.: PREV199800304719. Multiple fimbrial adhesins are required for full virulence of **Salmonella** typhimurium in mice. van Der Velden, Adrianus W. M.; Baumler, Andreas J.; Tsolis, Renee M.; Heffron, Fred (1). (1) Dep. Molecular Microbiol. and Immunol., Oregon Health Sci. Univ., 3181 SW Sam Jackson Park Rd., L220, Portland, OR 97201 USA. Infection and Immunity, (June, 1998) Vol. 66, No. 6, pp. 2803-2808. ISSN: 0019-9567. Language: English.

AB Adhesion is an important initial step during bacterial colonization of the intestinal mucosa. However, mutations in the **Salmonella** typhimurium fimbrial operons lpf, pef, or fim only moderately alter mouse virulence. The respective adhesins may thus play only a minor role during infection or S. typhimurium may encode alternative virulence factors that can functionally compensate for their loss. To address this question, we constructed mutations in all four known fimbrial operons of S. typhimurium: fim, lpf, pef, and agf. A mutation in the **agfB gene** resulted in a threefold increase in the oral 50% lethal dose (LD50) of S. typhimurium for mice. In contrast, an S. typhimurium strain carrying mutations in all four fimbrial operons (quadruple mutant) had a 26-fold increased oral LD50. The quadruple mutant, but not the agfB mutant, was recovered in reduced numbers from murine fecal pellets, suggesting that a reduced ability to colonize the intestinal lumen contributed to its attenuation. These data are evidence for a synergistic action of fimbrial operons during colonization of the mouse intestine and the development of murine typhoid fever.

L31 ANSWER 8 OF 22 MEDLINE DUPLICATE 5

1998233741 Document Number: 98233741. PubMed ID: 9573197. Isolation of an **Escherichia** coli K-12 mutant strain able to form biofilms on inert surfaces: involvement of a new ompR allele that increases curli expression. Vidal O; Longin R; Prigent-Combaret C; Dorel C; Hooreman M; Lejeune P. (Laboratoire de Genetique Moleculaire des Microorganismes et des Interactions Cellulaires, CNRS UMR 5577, Institut National des Sciences Appliquees de Lyon, Villeurbanne, France.) JOURNAL OF BACTERIOLOGY, (1998 May) 180 (9) 2442-9. Journal code: HH3; 2985120R. ISSN: 0021-9193. Pub. country: United States. Language: English.

AB Classical laboratory strains of **Escherichia** coli do not spontaneously colonize inert surfaces. However, when maintained in continuous culture for evolution studies or industrial processes, these strains usually generate adherent mutants which form a thick biofilm, visible with the naked eye, on the wall of the culture apparatus. Such a mutant was isolated to identify the genes and morphological structures involved in biofilm formation in the very well characterized E. coli K-12

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context. This mutant acquired the ability to colonize hydrophilic (glass) and hydrophobic (polystyrene) surfaces and to form aggregation clumps. A single point mutation, resulting in the replacement of a leucine by an arginine residue at position 43 in the regulatory **protein** OmpR, was responsible for this phenotype. Observations by electron microscopy revealed the presence at the surfaces of the mutant bacteria of fibrillar structures looking like the particular fimbriae described by the Olsen group and designated curli (A. Olsen, A. Jonsson, and S. Normark, Nature 338:652-655, 1989). The production of curli (visualized by Congo red binding) and the expression of the **csgA gene** encoding curlin synthesis (monitored by coupling a reporter gene to its promoter) were significantly increased in the presence of the ompR allele described in this work. Transduction of knockout mutations in either csgA or ompR caused the loss of the adherence properties of several biofilm-forming E. coli strains, including all those which were isolated in this work from the wall of a continuous culture apparatus and two clinical strains isolated from patients with catheter-related infections. These results indicate that curli are morphological structures of major importance for inert surface colonization and biofilm formation and demonstrate that their synthesis is under the control of the EnvZ-OmpR two-component regulatory system.

L31 ANSWER 9 OF 22 CAPLUS COPYRIGHT 2001 ACS DUPLICATE 6
1997:378296 Document No. 127:46035 **Salmonella** gene agfA and encoded **protein** for nucleic acid-based or antibody-based infection diagnosis. Doran, James L.; Kay, William W.; Collinson, S. Karen; Clouthier, Sharon C. (University of Victoria Innovation & Development Corp., Can.). U.S. US 5635617 A 19970603, 85 pp. Cont.-in-part of U.S. Ser. No. 54,452, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1994-233788 19940426. PRIORITY: US 1993-54452 19930426.

AB The **agfA gene** and **protein sequences** of **Salmonella** enteritidis are disclosed. Also disclosed are methods and compns. suitable for diagnostic tests utilizing the isolated gene and **protein**, to give highly specific nucleic acid-based and antibody-based diagnostic assays to **Salmonella**, and/or enteropathogenic bacteria of the family **Enterobacteriaceae**.

L31 ANSWER 10 OF 22 BIOSIS COPYRIGHT 2001 BIOSIS
1997:394153 Document No.: PREV199799693356. SEF17 fimbriae are essential for the convoluted colonial morphology of **Salmonella** enteritidis. Allen-Vercoe, Emma; Dibb-Fuller, Mike; Thorns, Christopher J.; Woodward, Martin J. (1). (1) Dep. Bacteriol., Central Veterinary Lab., Woodham Lane, New Haw, Addlestone, Surrey KT15 3NB UK. FEMS Microbiology Letters, (1997) Vol. 153, No. 1, pp. 33-42. ISSN: 0378-1097. Language: English.

AB **Salmonella** enteritidis isolated from poultry infections generated a convoluted colonial morphology after 48 h growth on colonisation factor **antigen** (CFA) agar at 25 degree C. A mutant S. enteritidis defective for the elaboration f the SEF17 fimbrial **antigen**, in which the agf gene cluster was inactivated by insertion of an ampicillin resistance gene cassette, and other wild-type S. enteritidis transduced to this genotype failed to produce convoluted colonies. However, growth of SEF 17- mutants at 25 degree C on CFA agar supplemented with 0.001% Congo red resulted in partial recovery of the phenotype. Immunoelectron microscopy demonstrated that copious amounts of the SEF17 fimbrial **antigen** were present in the extracellular matrix of convoluted colonies of wild-type virulent S. enteritidis isolates. Bacteria were often hyperflagellated also. Immunoelectron microscopy of SEF17- mutants grown on CFA agar+0.001% Congo red demonstrated the elaboration of an as yet undefined fimbrial structure. Isolates of S. enteritidis which were described previously as avirulent and sensitive to environmental stress failed to express SEF17 or produce

convoluted colonies. These data indicate an essential role for SEF17, and possibly for another fimbria and flagella, in the generation of the convoluted colonial phenotype. The relationship between virulence and colonial phenotype is discussed.

L31 ANSWER 11 OF 22 MEDLINE DUPLICATE 7
96146512 Document Number: 96146512. PubMed ID: 8550497.
Salmonella enteritidis agfBAC operon encoding thin, aggregative fimbriae. Collinson S K; Clouthier S C; Doran J L; Banser P A; Kay W W. (Department of Biochemistry and Microbiology, University of Victoria, British Columbia, Canada.) JOURNAL OF BACTERIOLOGY, (1996 Feb) 178 (3) 662-7. Journal code: HH3; 2985120R. ISSN: 0021-9193. Pub. country: United States. Language: English.

AB **Salmonella** enteritidis produces thin, aggregative fimbriae, named SEF17, which are composed of polymerized AgfA fimbrin **proteins**. DNA **sequence** analysis of a 2-kb region of S. enteritidis DNA revealed three contiguous genes, agfBAC. The 453-bp **agfA gene** encodes the AgfA fimbrin, which was predicted to be 74% identical and 86% similar in primary **sequence** to the **Escherichia** coli curli structural **protein**, CsgA. pHAG, a pUC18 derivative containing a 3.0-kb HindIII fragment encoding agfBAC, directed the in vitro expression of the major AgfA fimbrin, with an M(r) of 17,000, and a minor AgfB **protein**, with an M(r) of 16,000, encoded by the 453-bp **agfB gene**. AgfA was not expressed from pDAG, a pUC18 derivative containing a 3.1-kb DraI DNA fragment encoding agfA but not agfB. Primer extension analysis identified two adjacent transcription start sites located immediately upstream of agfB in positions analogous to those of the E. coli curlin csgBA operon. No transcription start sites were located immediately upstream of agfA or agfC. Northern (RNA) blot analysis confirmed that transcription of agfA was initiated from the agfB promoter region. Secondary-structure analysis of the putative mRNA transcript for agfBAC predicted the formation of a stem-loop structure (delta Gzero, -22 kcal/mol [-91 kJ/mol]) in the intercistronic region between agfA and agfC, which may be involved in stabilization of the agfBA portion of the agfBAC transcript. agfBAC and flanking regions had a high degree of **sequence** similarity with those counterparts of the E. coli curlin csgBA region for which **sequence** data are available. These data are demonstrative of the high degree of similarity between S. enteritidis SEF17 fimbriae and E. coli curli with respect to fimbrin amino acid **sequence** and genetic organization and, therefore, are indicative of a common and relatively recent ancestry.

L31 ANSWER 12 OF 22 MEDLINE
96186906 Document Number: 96186906. PubMed ID: 8635753. The location of four fimbrin-encoding genes, agfA, fimA, sefA and sefD, on the **Salmonella** enteritidis and/or S. typhimurium XbaI-BlnI genomic restriction maps. Collinson S K; Liu S L; Clouthier S C; Banser P A; Doran J L; Sanderson K E; Kay W W. (Department of Biochemistry and Microbiology, University of Victoria, British Columbia, Canada.) GENE, (1996 Feb 22) 169 (1) 75-80. Journal code: FOP; 7706761. ISSN: 0378-1119. Pub. country: Netherlands. Language: English.

AB Four fimbrin-encoding genes, fimA (type-1 or SEF21 fimbriae), agfA (thin aggregative or SEF17 fimbriae), sefA (SEF14 fimbriae and sefD (SEF18 fimbriae) from **Salmonella** enteritidis (Se) 27655-3b were located onto the XbaI-BlnI genomic restriction maps of **Salmonella** typhimurium (St) LT2 and Se strains SSU7998 and 27655-3b. The XbaI or BlnI genomic fragments carrying these genes were identified by hybridization with labeled oligodeoxyribonucleotides or fimbrin-encoding genes. The fimbrin-encoding genes were not encoded by the virulence plasmids, but were located on chromosomal DNA fragments. The position of each gene on a given XbaI fragment was determined by hybridization of a series of

XbaI-digested genomic DNA samples from previously characterized Tn10 mutants of Se and St with its respective probe. The fimA gene mapped near 13 centisomes (Cs) between purE884::Tn10 at 12.6 Cs (11.8 min) and apeE2::Tn10 at 12.8 Cs (12.3 min) beside the first XbaI site at 13.0 Cs in St or between purE884::Tn10 at 12.6 Cs and the XbaI site at 13.6 Cs in Se. The **agfA gene** mapped near 26 Cs between putA::Tn10 and pyrC691::Tn10 in St, but near 40 Cs between pncX::Tn10 and the XbaI site at 43.3 Cs in Se. This difference in map position was due to the location of agfA near one end of the 815-kb chromosomal fragment inverted between Se and St. The sefA and sefD genes mapped precisely at 97.6 Cs in Se, but were absent from the genome of St LT2. To verify the mapping procedures used herein, tctC was also mapped in both **Salmonella** serovars. As expected, tctC mapped near 60 Cs in both St and Se, thereby confirming previous studies.

L31 ANSWER 13 OF 22 CAPLUS COPYRIGHT 2001 ACS
1995:428858 Document No. 122:212102 Cloning of **Salmonella** genes and vaccines consisting of **Salmonella proteins** or attenuated **Salmonella**. Kay, William W.; Collinson, S. Karen; Clouthier, Sharon C.; Doran, James L. (University of Victoria Innovation and Development, Can.; King, Joshua). PCT Int. Appl. WO 9425598 A2 19941110, 66 pp. DESIGNATED STATES: W: AU, BB, BG, BR, BY, CA, CN, CZ, FI, GE, HU, JP, KG, KP, KR, KZ, LK, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SI, SK, TJ, TT, UA, UZ, VN; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1994-IB207 19940426. PRIORITY: US 1993-54452 19930426.

AB Methods and compns. for eliciting an immune response in animals utilizing the title genes and/or encoded **proteins**, including the utilization of E. coli or attenuated **Salmonella** produced pursuant to induced mutations in certain of the described genes are claimed. The S. enteritidis sefA, sefB, sefC, sefD, sefU1, sefU2, and **agfA genes**, and S. typhimurium tctA, tctB, and tctC genes were cloned. Immunization of mice with attenuated S. enteritidis resulted in prodn. of protective antibodies to the pathogen. S. enteritidis strains mutated in the sefA, agfA, sefD, or fimA genes were produced. E. coli contg. S. enteritidis DNA contg. the sefABC operon produced intact fimbriae.

L31 ANSWER 14 OF 22 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1994-358274 [44] WPIDS
CR 1994-358275 [44]; 1997-309886 [28]

AB WO 9425597 A UPAB: 19970716
(A) An isolated nucleic acid molecule is claimed comprising (i) a sefBCD gene cluster, (ii) a sefU2U1 gene cluster, (iii) a sefU1 gene, (iv) a sefU2 gene, (v) a sefB gene, (vi) a sefC gene, (vii) a sefD gene, (viii) an **agfA gene**, (ix) a tctCBA gene cluster, (x) a tctA gene, (xi) a tctB gene or (xii) a tctC gene. Also claimed is (B) a probe comprising at least a portion of nucleotides 755-1495, 1512-3956 or 3953-4402 of the 4400 bp **sequence** given in the specification, nucleotides numbered 554-1123 or 449-1027 of the 675 bp **sequence** given in the specification, nucleotides numbered 3323-4420 of the 1126 bp **sequence** given in the specification, nucleotides numbered 2727-3236 of the 510 bp **sequence** given in the specification, bases numbered 1393-2270 of the 978 , bp **sequence** given in the specification or nucleotides numbered 1-451 of the 451 bp **sequence** given in the specification, the probe being capable of specifically hybridising the **Salmonella** under conditions of high stringency.
USE - The compsns. and methods can be used for the detection of **Salmonella**, and enteropathogenic bacteria of the family. **Enterobacteriaceae**. The compsns. can also be used to produce antibodies which can be used for detection or in blocking assays or for

identification of receptors for **Salmonella** fimbrin or eukaryotic cells. The compsns. can also be used for immunisation. Dwg.0/15

L31 ANSWER 15 OF 22 BIOSIS COPYRIGHT 2001 BIOSIS
1994:225108 Document No.: PREV199497238108. Cloning and characterization of the socA locus which restores development to Myxococcus xanthus C-signaling mutants. Lee, Keesoo; Shimkets, Lawrence J. (1). (1) Dep. Microbiol., Univ. Georgia, Athens, GA 30602 USA. Journal of Bacteriology, (1994) Vol. 176, No. 8, pp. 2200-2209. ISSN: 0021-9193. Language: English.
AB The **csgA gene** produces an intercellular signal during fruiting body formation of the myxobacterium Myxococcus xanthus. Sporulating pseudorevertants were isolated to allow us to understand the mechanism by which CsgA is perceived by cells and used to regulate developmental gene expression. Two strains, LS559 and LS560, which have closely linked transposon insertions, soc-559 (formerly csp-559) and soc-560 (formerly csp-560), respectively, regained all the developmental behaviors lost by the csgA mutation including the ability to ripple, form fruiting bodies, and sporulate. The **sequence** analysis of the socA locus revealed that there are three putative **protein**-coding regions, designated socA1, socA2, and socA3. The deduced amino acid **sequence** of socA1 exhibits characteristics of the short-chain alcohol dehydrogenase family. The deduced amino acid **sequence** of socA2 shares 48% identity with the frdD gene product of their operon in Proteus vulgaris which anchors fumarate reductase to the membrane. The deduced amino acid **sequence** of socA3 does not show homology to any known **proteins**. Genotypic complementation, Northern (RNA) blotting, DNA **sequence** analysis, and the pattern of gene expression all suggest that these three genes are polycistronic. Since the socA mutations effectively bypass CsgA, the question of why csgA is maintained in M. xanthus was examined by studying the long-term stability of socA spores. Unlike the wild type, socA mutant spores germinated on starvation agar. Transmission electron micrographs of spore thin sections revealed that germination is not due to an obvious structural deficiency of the socA spores. These results suggest that the ability of socA myxospores to survive long periods under unfavorable environmental conditions is severely compromised. Therefore, socA appears to be essential for the development of M. xanthus.

L31 ANSWER 16 OF 22 MEDLINE DUPLICATE 8
95157246 Document Number: 95157246. PubMed ID: 7854117. Sigma S-dependent growth-phase induction of the csgBA promoter in **Escherichia** coli can be achieved in vivo by sigma 70 in the absence of the nucleoid-associated **protein** H-NS. Arnqvist A; Olsen A; Normark S. (Department of Microbiology, Umea University, Sweden.) MOLECULAR MICROBIOLOGY, (1994 Sep) 13 (6) 1021-32. Journal code: MOM; 8712028. ISSN: 0950-382X. Pub. country: ENGLAND: United Kingdom. Language: English.
AB The stationary-phase-specific sigma factor sigma S (RpoS/KatF) is required for **Escherichia** coli to induce expression of fibronectin-binding curli organelles upon reaching stationary phase. We show that the **csgA gene** which encodes the curlin subunit **protein** belongs to a dicistronic operon, csgBA. The transcriptional start site of csgBA was determined and an AT-rich up-stream activating **sequence** (UAS) required for transcriptional activation was identified. The pcsgBA promoter is not specific for sigma S since the same promoter **sequence** can be used by E sigma 70 in vivo in a strain lacking nucleoid-associated **protein** H-NS and sigma S. Transcription remained growth-phase induced and dependent upon the UAS in such a double mutant. Furthermore, we demonstrate that an additional operon, hdeAB, which is also dependent upon sigma S for transcription, can be transcribed by E sigma 70 in vivo in the absence of H-NS by utilizing the phdeAB promoter. Two other genes known to be under

the control of sigma S for expression, bolA and katE, remained transcriptionally silent in the absence of H-NS. It is suggested that a subset of E. coli promoters can be recognized by both E sigma S and E sigma 70 in vivo but H-NS interacting with these **sequences** prevents formation of successful transcription-initiation complexes with E sigma 70.

L31 ANSWER 17 OF 22 MEDLINE DUPLICATE 9
94228146 Document Number: 94228146. PubMed ID: 8173808. Environmental regulation of curli production in **Escherichia** coli. Olsen A; Arnqvist A; Hammar M; Normark S. (Department of Molecular Microbiology, Washington University School of Medicine, St. Louis, Missouri.) INFECTIOUS AGENTS AND DISEASE, (1993 Aug) 2 (4) 272-4. Journal code: B09; 9209834. ISSN: 1056-2044. Pub. country: United States. Language: English.
AB Curli are novel surface organelles on E. coli that mediate binding to soluble matrix **proteins**. The expression of curli is affected by environmental factors, such as temperature, osmolarity, and growth conditions. Curli formation is regulated at the level of transcription, in that the **csgA gene** can be transcriptionally activated by the cytosolic Crl **protein** or transcriptionally relieved by a mutation in hns. The expression of curli is also dependent on functional RpoS. E. coli--expressing curli bind to human skin tissue, provided they are precoated with soluble fibronectin, suggesting that curli may act as a colonization factor in host-microbe interactions. Fibronectin is a multifunctional extracellular matrix and plasma **protein** involved in cell adhesion and cell spreading. It also interacts with a variety of microorganisms, and thus the role of fibronectin in mediating binding of curliated E. coli is of great interest. An investigation of the **epitopes** of both the fibronectin molecule and the curlin subunit **protein** involved in the binding of E. coli to tissue will give us more insight into the initial colonization of host surfaces by bacteria.

L31 ANSWER 18 OF 22 BIOSIS COPYRIGHT 2001 BIOSIS
1992:523134 Document No.: BA94:131209. THE CRL **PROTEIN** ACTIVATES CRYPTIC GENES FOR CURLI FORMATION AND FIBRONECTIN BINDING IN **ESCHERICHIA**-COLI HB101. ARNQVIST A; OLSEN A; PFEIFER J; RUSSELL D G; NORMARK S. DEP. MICROBIOL., UNIVERSITY UMEA, S-90187 UMEA, SWED.. MOL MICROBIOL, (1992) 6 (17), 2443-2452. CODEN: MOMIEE. ISSN: 0950-382X. Language: English.
AB Curli are thin, coiled, temperature-regulated fibers on fibronectin-binding **Escherichia** coli. The subunit **protein** of curli was highly homologous at its amino terminus to SEF-17, the subunit **protein** of thin, aggregative fimbriae of **Salmonella** enteritidis 27655 strain 3b, suggesting that these fibres form a novel class of surface organelles on **enterobacteria** . E. coli HB101 is non-curliated and unable to bind soluble, iodinated fibronectin. The phenotypically cryptic curlin subunit gene, csgA, in HB101 is transcriptionally activated by expressing the cytoplasmic CrI on a multicopy plasmid. Transcriptional activation of csgA by Crl was observed after growth at 26.degree.C but not at 37.degree.C, even though crl transcription was not thermoregulated. A deletion of the 39 carboxy-terminal residues abolished Crl activity, whereas a deletion of 10 residues at the C-terminus did not, implying that a region between residue 93 and 122 in the 132-amino-acid-residue large Crl **protein** is required for activating curli expression in E. coli HB101. crl is a normal housekeeping gene in E. coli and it is suggested that its gene product may either be a DNA-binding **protein** affecting chromatin structure as has been suggested for histone-like **protein** H1 or interact with specific regulatory **protein**(s) controlling transcription of genes required for curli formation and fibronectin binding.

L31 ANSWER 19 OF 22 MEDLINE DUPLICATE 10

Searched by: Mary Hale 308-4258 CM-1 12D16

90368589 Document Number: 90368589. PubMed ID: 2118510. CsgA, an extracellular **protein** essential for Myxococcus xanthus development. Shimkets L J; Rafiee H. (Department of Microbiology, University of Georgia, Athens 30602.) JOURNAL OF BACTERIOLOGY, (1990 Sep) 172 (9) 5299-306. Journal code: HH3; 2985120R. ISSN: 0021-9193. Pub. country: United States. Language: English.

AB CsgA mutants of Myxococcus xanthus appear to be defective in producing an extracellular molecule essential for the developmental behaviors of this bacterium. The **csgA gene** encodes a 17.7-kilodalton polypeptide whose function and cellular location were investigated with immunological probes. Large quantities of the **CsgA gene** product were obtained from a lacZ-csgA translational gene fusion expressed in **Escherichia** coli. The chimeric 21-kilodalton **protein** was purified by preparative sodium dodecyl sulfate-polyacrylamide gel electrophoresis. Affinity-purified polyclonal antibodies raised against the fusion **protein** were used to determine the cellular location of the native CsgA **protein** by colloidal gold labeling and transmission electron microscopy. Between 1,100 and 2,200 extracellular molecules of CsgA per developing M. xanthus cell were detected, most of which were associated with the extracellular matrix. The anti-CsgA antibodies inhibited wild-type development unless they were first neutralized with the fusion **protein**. Together these results suggest that the **CsgA gene** product has an essential, extracellular function during development, possibly as a pheromone.

L31 ANSWER 20 OF 22 MEDLINE DUPLICATE 11

90251611 Document Number: 90251611. PubMed ID: 2111012. Purification and properties of Myxococcus xanthus C-factor, an intercellular signaling **protein**. Kim S K; Kaiser D. (Department of Biochemistry, Stanford University School of Medicine, California 94305.) PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, (1990 May) 87 (10) 3635-9. Journal code: PV3; 7505876. ISSN: 0027-8424. Pub. country: United States. Language: English.

AB C-factor, a Myxococcus xanthus **protein** that restores the developmental defects of a class of nonautonomous mutants resulting from mutation of the **csgA gene**, has been purified approximately 1000-fold from starved wild-type cells. The monomeric form of C-factor is a single polypeptide with a molecular mass of 17 kDa that can be solubilized by detergent from membrane components. Characterization by gel filtration and denaturing gel electrophoresis suggests that biologically active C-factor is a dimer composed of two 17-kDa monomers. Antibodies against a form of the M. xanthus **csgA gene** product overexpressed in **Escherichia** coli react with purified C-factor.

L31 ANSWER 21 OF 22 MEDLINE DUPLICATE 12

90094223 Document Number: 90094223. PubMed ID: 2152902. The Myxococcus xanthus FprA **protein** causes increased flavin biosynthesis in **Escherichia** coli. Shimkets L J. (Department of Microbiology, University of Georgia, Athens 30602.) JOURNAL OF BACTERIOLOGY, (1990 Jan) 172 (1) 24-30. Journal code: HH3; 2985120R. ISSN: 0021-9193. Pub. country: United States. Language: English.

AB The fprA gene is immediately adjacent to the **csgA gene** (formerly known as spoC) of Myxococcus xanthus. Whereas the **csgA gene** has an essential role in cell interactions during the developmental cycle, the function of the fprA gene is unknown. Gene disruption was used to determine what affect a null mutation in this gene has on the phenotype of the cell. A csgA-fprA deletion and an fprA frameshift mutation were constructed in vitro in a cloned copy of this locus and then inserted into the M. xanthus chromosome to create a merodiploid with the wild-type and mutant alleles in tandem. The merodiploid was then allowed to segregate one of the two alleles along

with the vector **sequences** in an effort to replace the wild-type allele with the mutant allele. All of the segregants had the wild-type allele, suggesting that a functional fprA gene is essential for vegetative growth. The fprA gene was placed under control of the lacZ transcriptional and translational signals and overexpressed in **Escherichia** coli, and the new host was examined for any phenotypic changes. A 27-kilodalton **protein** was observed in sodium dodecyl sulfate-polyacrylamide gels of total-cell **protein** as predicted from the DNA **sequence** of this gene. Overexpression of FprA caused the accumulation of a yellow pigment with spectral and redox properties similar to that of the flavins. The pigment cochromatographed with flavin mononucleotide by Silica Gel G thin-layer chromatography.(ABSTRACT TRUNCATED AT 250 WORDS)

L31 ANSWER 22 OF 22 BIOSIS COPYRIGHT 2001 BIOSIS
1990:108820 Document No.: BA89:58311. THE MYXOCOCCUS-XANTHUS FPR-A **PROTEIN** CAUSES INCREASED FLAVIN BIOSYNTHESIS IN **ESCHERICHIA**-COLI. SHIMKETS L J. DEP. MICROBIOL., UNIV. GEORGIA, ATHENS, GEORGIA 30602.. J BACTERIOL, (1989) 72 (1), 24-30. CODEN: JOBAAY. ISSN: 0021-9193. Language: English.

AB The fprA gene is immediately adjacent to the **csgA gene** (formerly known as spoC) of Myxococcus xanthus. Whereas the **csgA gene** has an essential role in cell interactions during the developmental cycle, the function of the fprA gene is unknown. Gene disruption was used to determine what affect a null mutation in this gene has on the phenotype of the cell. A csg-A-frpA deletion and an fprA frameshift mutation were constructed in vitro in a cloned copy of this locus and then inserted into the M. xanthus chromosome to create a merodiploid with the wild-type and mutant alleles in tandem. The merodiploid was then allowed to segregate one of the two alleles along with the vector **sequences** in an effort to replace the wild-type allele with the mutant allele. All of the segregants had the wild-type allele, suggesting that a functional fprA gene is essential for vegetative growth. The fprA gene was placed under control of the lacZ transcriptional and translational signals and overexpressed in **Escherichia** coli, and the new host was examined for any phenotypic changes. A 27-kilodalton **protein** was observed in sodium dodecyl sulfate-polyacrylamide gels of total-cell **protein** as predicted from the DNA **sequence** of this gene. Overexpression of FprA caused the accumulation of a yellow pigment with spectral and redox properties similar to that of the flavins. The pigment cochromatographed with flavin mononucleotide by Silica Gel G thin-layer chromatography. Approximately two-thirds of the total cellular flavin was associated with soluble **protein**. The major soluble flavin-associated **protein** was purified on DEAE-Bio-Gel A and Phenyl-Sepharose CL-4B and by polyacrylamide gel electrophoresis. The amino acid composition of the purified **protein** was similar to that predicted from the DNA **sequence** of the FprA fusion **protein**. Apparently, overproduction of FprA (for flavin-associated **protein** A) in E. coli resulted in a large increase in flavin biosynthesis. Together, these results suggest that the fprA gene encodes a **protein** that is associated with flavin mononucleotide and has an essential function in M. xanthus.

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L39 ANSWER 1 OF 1 MEDLINE DUPLICATE 1
89108001 Document Number: 89108001. PubMed ID: 3145903. A link between cell movement and gene expression argues that motility is required for cell-cell signaling during fruiting body development. Kroos L; Hartzell P; Stephens K; Kaiser D. (Department of Biochemistry, Stanford University, California 94305.) GENES AND DEVELOPMENT, (1988 Dec) 2 (12A) 1677-85. Journal code: FN3; 8711660. ISSN: 0890-9369. Pub. country: United States. Language: English.

=> d abs

L39 ANSWER 1 OF 1 MEDLINE DUPLICATE 1
AB Nonmotile mutants of Myxococcus xanthus (Myxobacterales) failed to execute the morphogenetic movements required to shape a fruiting body. In addition, nonmotile mutants produced very few spores when plated for fruiting body development at cell densities appropriate for wild-type cells. At higher initial cell densities, the proportion of nonmotile cells that sporulate increased, indicating that one important function of motility in fruiting body development is to increase the local cell density. However, even at 10 times normal cell density, nonmotile cells sporulated at only 1% the wild-type level. This sporulation deficiency of nonmotile mutants accompanies an altered pattern of gene expression, monitored by using transcriptional fusions of lacZ to genes expressed at specific times during fruiting body development. Motility was not required for normal expression of five lac fusions that are expressed within the first 6 hr of fruiting-body development. However, the levels of expression from five lac fusions to later-expressed genes were reduced or abolished in nonmotile strains. beta-Galactosidase expression in these late Tn5 lac insertions was increased, and fruiting body development occurred in certain nonmotile strains that can be stimulated to move when mixed with a donor strain. This shows that motility itself is required because the stimulated cells are nonmotile genotypically. The nonmotile mutations had the same effect on developmental beta-galactosidase expression from these 10 lac fusions as an insertion mutation in the csg (formerly **spoC**) **gene**. csg mutants have a cell-cell interaction defect that blocks fruiting body development at approximately 6 hr. The similarity in the pattern of developmental expression of motility mutants and csg mutants suggests that motility is required for this csg-mediated cell-cell interaction.

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